PLANNING AND SCHEDULING DIPLOMA

STEPS FOR PROJECT PLANNING AND SCHEDULING

By: Mohamed Zaher

TYPICAL STEPS FOR PROJECT PLANNING & SCHEDULING

- Define the project (Create WBS).
- List of project activities.
- Sequence the activities.
- Activity resource estimating. (requirements)
- Activity duration estimating (PERT, CPM).

TYPICAL STEPS FOR PROJECT PLANNING & SCHEDULING (CONT.)

- Schedule calculation/development.
  - Define critical path.
  - Floats calculation.
  - Schedule compression.
  - Leveling.
- Cost estimating.
- Develop Budget.

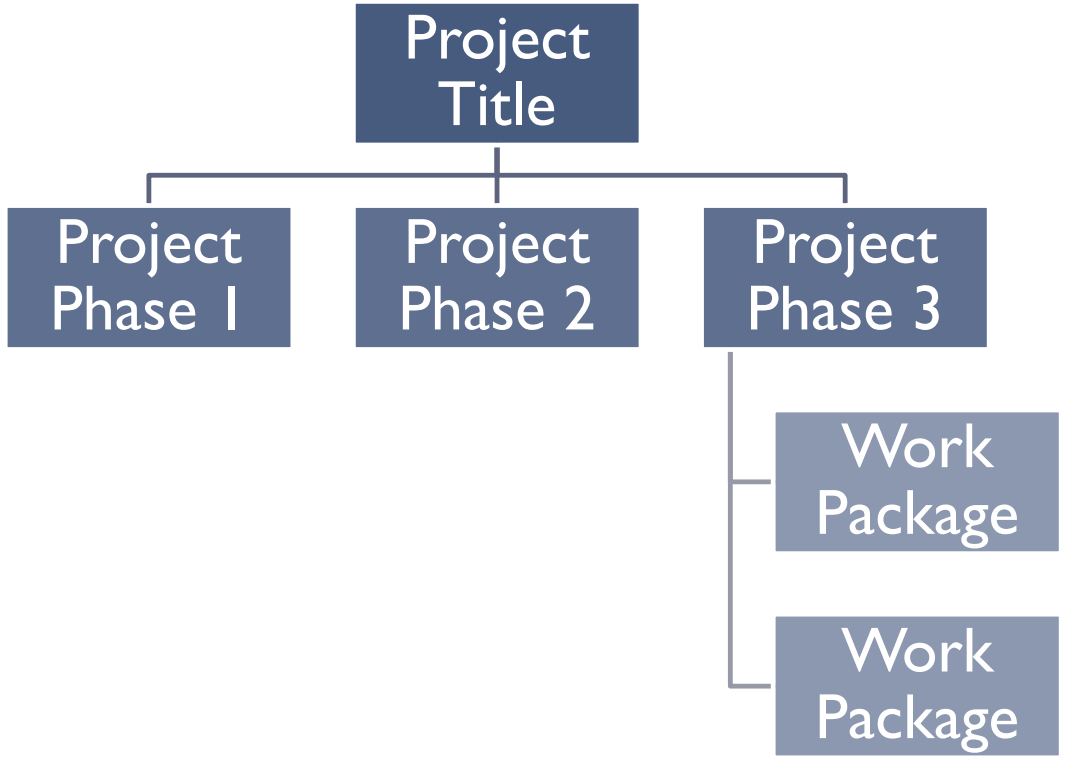
DEFINE THE PROJECT (CREATE WBS)

- WBS stands for Work Breakdown Structure, the WBS is a tree structure of successively further breakdowns of work scope into component parts.
- The planned work contained within the lowest-level WBS components, which are called **Work Package**, can be scheduled, cost estimated, monitored, and controlled.
- How to develop WBS?
  - WBS Templates
  - Decomposition

DEFINE THE PROJECT (CREATE WBS)

- Hints:
  - The **Top Level** of the WBS is Project Title.
  - The **First Level** is most commonly the same as the project phases.
  - The **Second & Later levels** break the project into smaller pieces.
  - Some level can be broken down further than the others.
  - The **lowest level** that the project manager will manage is called the **work package**.
  - This work may be broken down again by the person or person completing the work.

DEFINE THE PROJECT (CREATE WBS)



WORKSHOP

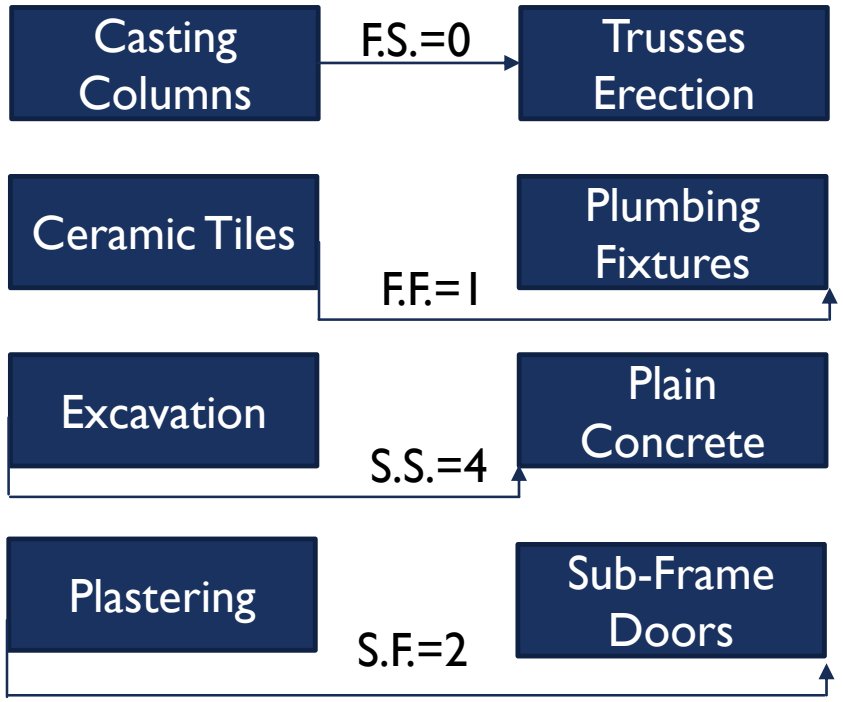
LIST OF PROJECT ACTIVITIES

- Note that there is difference between Activities and B.O.Q items, for example:
- Concrete for slabs (B.O.Q item), can be divided into smaller activities such as shuttering, steel reinforcement, pouring, or divided per floor.
- However, Block works 25 cm thickness (m3) and 12 cm thickness (m2) (B.O.Q items), can be consolidated into (1) one activity.

- Activity list can be extracted from the B.O.Q.

SEQUENCE THE ACTIVITIES

- PDM includes four types of dependencies or precedence relationships:
  - Finish to Start
  - Finish to Finish
  - Start to Start
  - Start to Finish



SEQUENCE THE ACTIVITIES

- Leads and Lags
  - A lead may be added to start an activity before the predecessor activity is completed (-ve Lag).
  - A lag is inserted as a waiting time between activities

ACTIVITY RESOURCE REQUIREMENT

- The types and quantities of resources required for each activity in a work package.

- How is the estimation done?
  - Expert Judgement.
  - Alternative Analysis.
  - Published Estimating Data.
  - Bottom-up Estimating.

ACTIVITY DURATION ESTIMATING

- The process of estimating schedule activity durations uses information on schedule activity scope of work, required resources types, estimated resource quantities, and resource calendar with resource availabilities.

- How is the estimation done?
  - Expert Judgement.
  - Analogous Estimating.
  - Parametric Estimating.
    - $Duration = \frac{Quantity}{Productivity\ X\ no.of\ crews}$

THANKS FOR WATCHING